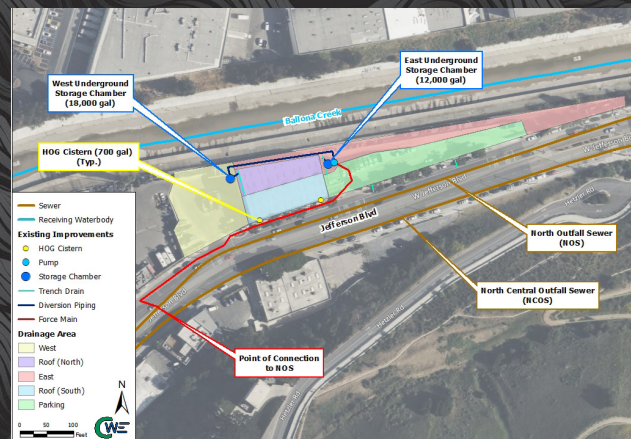
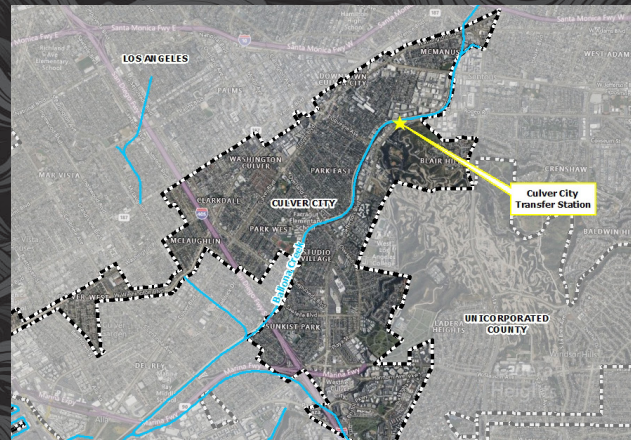




**Culver City Transfer Station
Stormwater Diversion System Upgrades**
Preliminary Design Report
CITY OF CULVER CITY, CALIFORNIA



City of Culver City Transfer Station Stormwater Diversion System Upgrades

Preliminary Design Report

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Table of Contents

| | |
|---|------------|
| TABLE OF CONTENTS | i |
| LIST OF FIGURES | ii |
| LIST OF TABLES | ii |
| ACRONYMS | iii |
| 1. INTRODUCTION | 1 |
| 1.1 BACKGROUND..... | 1 |
| 1.2 EXISTING HYDROLOGY AND STORMWATER FEATURES..... | 2 |
| 1.3 PROJECT GOALS AND OBJECTIVES | 4 |
| 2. HYDROLOGIC ANALYSIS | 5 |
| 2.1 METHODOLOGY..... | 5 |
| 2.2 DRAINAGE AREA..... | 5 |
| 2.3 LAND USE AND IMPERVIOUS AREA..... | 6 |
| 2.4 SOIL TYPE..... | 7 |
| 2.5 RESULTS..... | 7 |
| 3. PROPOSED ALTERNATIVES | 9 |
| 3.1 DIVERSION | 9 |
| 3.2 DIVERSION PIPING..... | 9 |
| 3.3 PUMP SYSTEM | 10 |
| 3.4 ALTERNATIVE 1..... | 11 |
| 3.4.1 <i>Alternative 1 - Preliminary Cost Opinion</i> | 12 |
| 3.5 ALTERNATIVE 2..... | 12 |
| 3.5.1 <i>Alternative 2 - Preliminary Cost Opinion</i> | 13 |
| 3.6 ALTERNATIVE 3..... | 14 |
| 3.6.1 <i>Alternative 3 - Preliminary Cost Opinion</i> | 15 |
| 3.7 COMPARISON OF ALTERNATIVES | 16 |
| 3.8 PREFERRED ALTERNATIVE | 17 |
| 3.9 CONSTRUCTION IMPACTS..... | 17 |
| 4. PERMITTING REQUIREMENTS | 18 |
| 5. REFERENCES | 19 |

Appendices

- Appendix A Request to Discharge Dry-Weather Runoff Approval Letter
- Appendix B Sewer Capacity Availability Request (SCAR)



List of Figures

| | |
|---|----|
| Figure 1-1 Project Location | 1 |
| Figure 1-2 Existing Hydrology and Stormwater Features | 3 |
| Figure 1-3 General Project Concept | 4 |
| Figure 2-1 South Roof and Parking Drainage Areas | 6 |
| Figure 2-2 Soil Type | 7 |
| Figure 3-1 Proposed Diversion System Location | 9 |
| Figure 3-2 Alternative 1 | 11 |
| Figure 3-3 Alternative 2 | 13 |
| Figure 3-4 Alternative 3 | 14 |

List of Tables

| | |
|---|----|
| Table 1-1 City Runoff Volumes and System Capacity | 3 |
| Table 2-1 Hydrologic Modeling Data Requirements | 5 |
| Table 2-2 Hydrologic Data Input | 6 |
| Table 2-3 Results of Hydrologic Analysis | 8 |
| Table 3-1 Pipe Configuration | 10 |
| Table 3-2 Summary of Key Pump Components | 10 |
| Table 3-3 Preliminary Cost Opinion for Alternative 1 | 12 |
| Table 3-4 Preliminary Cost Opinion for Alternative 2 | 13 |
| Table 3-5 Preliminary Cost Opinion for Alternative 3 | 15 |
| Table 3-6 Advantages and Disadvantages of Proposed Alternatives | 16 |

Acronyms

| | |
|----------------|---|
| CiLA | City of Los Angeles |
| CWA | Clean Water Act |
| GIS | Geographic Information System |
| HOG | Rainwater H2OG |
| IGP | Industrial General Permit |
| IWMD | Industrial Waste Management Division |
| LA Waterkeeper | Los Angeles Waterkeeper |
| LARIAC | Los Angeles Region Imagery Acquisition Consortium |
| LACFCD | Los Angeles County Flood Control District |
| LACPW | Los Angeles County Public Works |
| MODRAT | Modified Rational Method |
| NAL | Numeric Action Level |
| NEL | Numeric Effluent Limitation |
| NOS | North Outfall Sewer |
| NPDES | National Pollutant Discharge Elimination System |
| PVC | Polyvinyl Chloride |
| SCAR | Sewer Capacity Availability Request |
| SCAG | Southern California Association of Governments |
| SCE | Southern California Edison |
| SCADA | Supervisory Control and Data Acquisition |
| VFD | Variable Frequency Drive |

1. Introduction

The City of Culver City (City) owns and operates a solid waste transfer station (Transfer Station) at 9255 West Jefferson Boulevard, as shown in **Figure 1-1**. The facility receives solid waste, recyclable materials, and organics waste collected by City Environmental Programs and Operations Division, which are then transferred to landfills, material recovery facilities, and compost sites. The facility also provides roll-off service for construction and demolition debris collection.

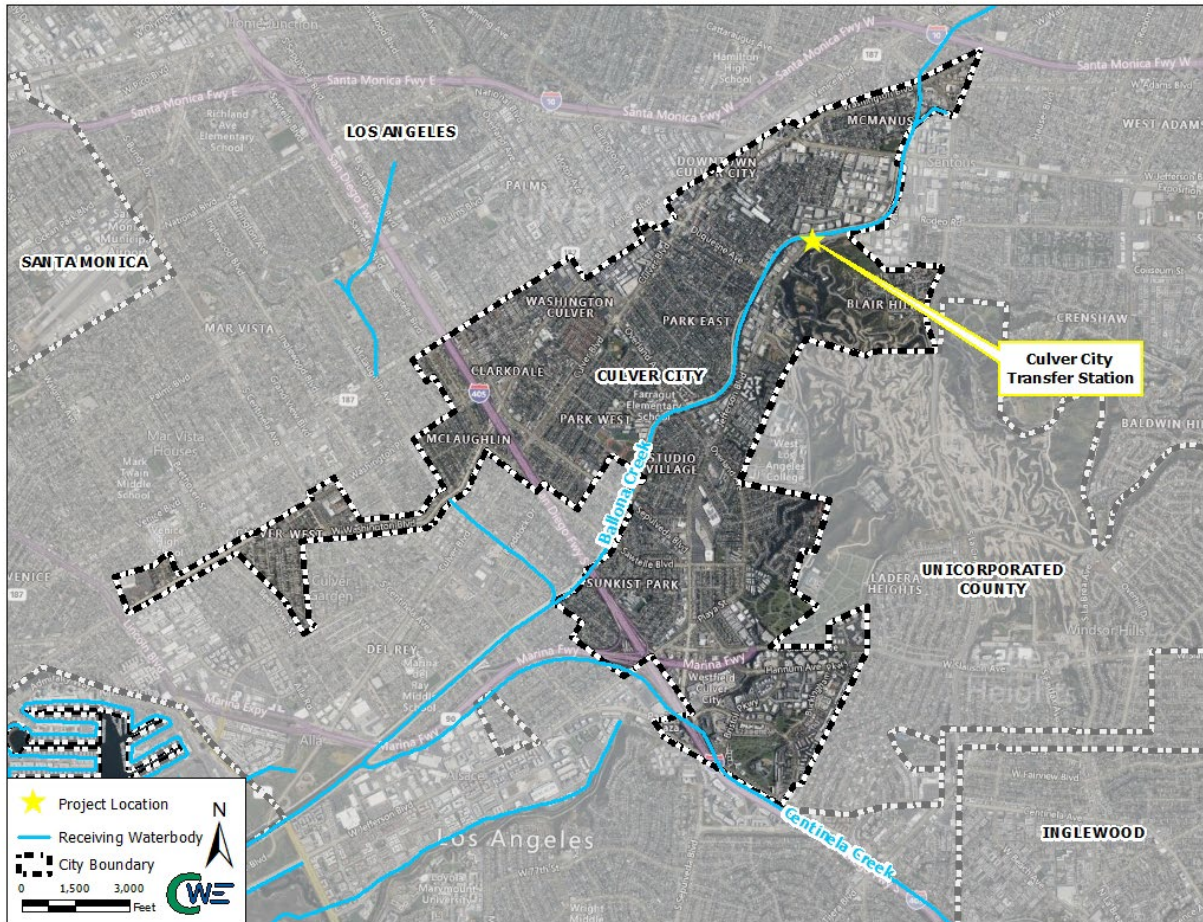


Figure 1-1 Project Location

1.1 Background

This facility is currently covered under the General Permit for Stormwater Discharges Associated with Industrial Activities (Industrial General Permit or IGP), Order No. 2014-0057-DWQ, as amended in 2015 and 2018 by Order No. 2015-0122-DWQ on November 6, 2018, National Pollutant Discharge Elimination System (NPDES) Order No. CAS000001. On March 10, 2025, Los Angeles Waterkeeper (LA Waterkeeper), a non-profit public benefit corporation, issued a Notice of Intent to file suit against the City for alleged violations of the NPDES General Permit and the Clean Water Act (CWA) via discharge of pollutants into storm drains and surface waters, including Ballona Creek and associated receiving waters. As a result, a consent decree was established between the City and LA Waterkeeper. One of the

provisions requires the City to implement a “Storm Water Rerouting Project”, which will reroute the stormwater runoff from the entire site to sanitary sewer during an 85th percentile, 24-hour storm event. The City is mandated to complete the project design by October 1, 2025, and finalize construction and begin full operation by October 1, 2026.

1.2 Existing Hydrology and Stormwater Features

The existing site is divided into five drainage areas, west, east, north roof, south roof, and parking, as shown in **Figure 1-2**. East and west drainage areas currently drain to two underground storage chambers with a combined capacity of 30,000 gallons, which is sufficient to capture the 85th percentile storm runoff volume from those two drainage areas. The captured stormwater runoff is currently retained in the underground storage chambers for 72 hours, then it is pumped to the North Outfall Sewer (NOS) and treated at the Hyperion Wastewater Treatment Plant. The approved Request to Discharge Dry-Weather Runoff by the City of Los Angeles (CiLA) Industrial Waste Management Division (IWMD) is attached in **Appendix A**.

Stormwater runoff from the south roof is captured by two series of Rainwater H2OG (HOG) system cisterns mounted on the Transfer Station exterior walls with a combined capacity of 1,400 gallons. The Rainwater HOG is a modular, flat-sided, fully enclosed tank/cistern used to collect and store stormwater from the roof for landscape irrigation. Runoff collected in the HOG cisterns during a storm event is slowly discharged to the adjacent planters for irrigation/infiltration once it is no longer raining. If it rains when the HOG cisterns are full, excess runoff overflows into bio-planters before draining to the nearby curb and discharging into the nearby storm drain system.

Stormwater runoff from the parking area drains into two parkway trench drains with media filters before draining to the nearby curb and discharging into the nearby storm drain system. Existing drainage and stormwater treatment features are shown in **Figure 1-2**.

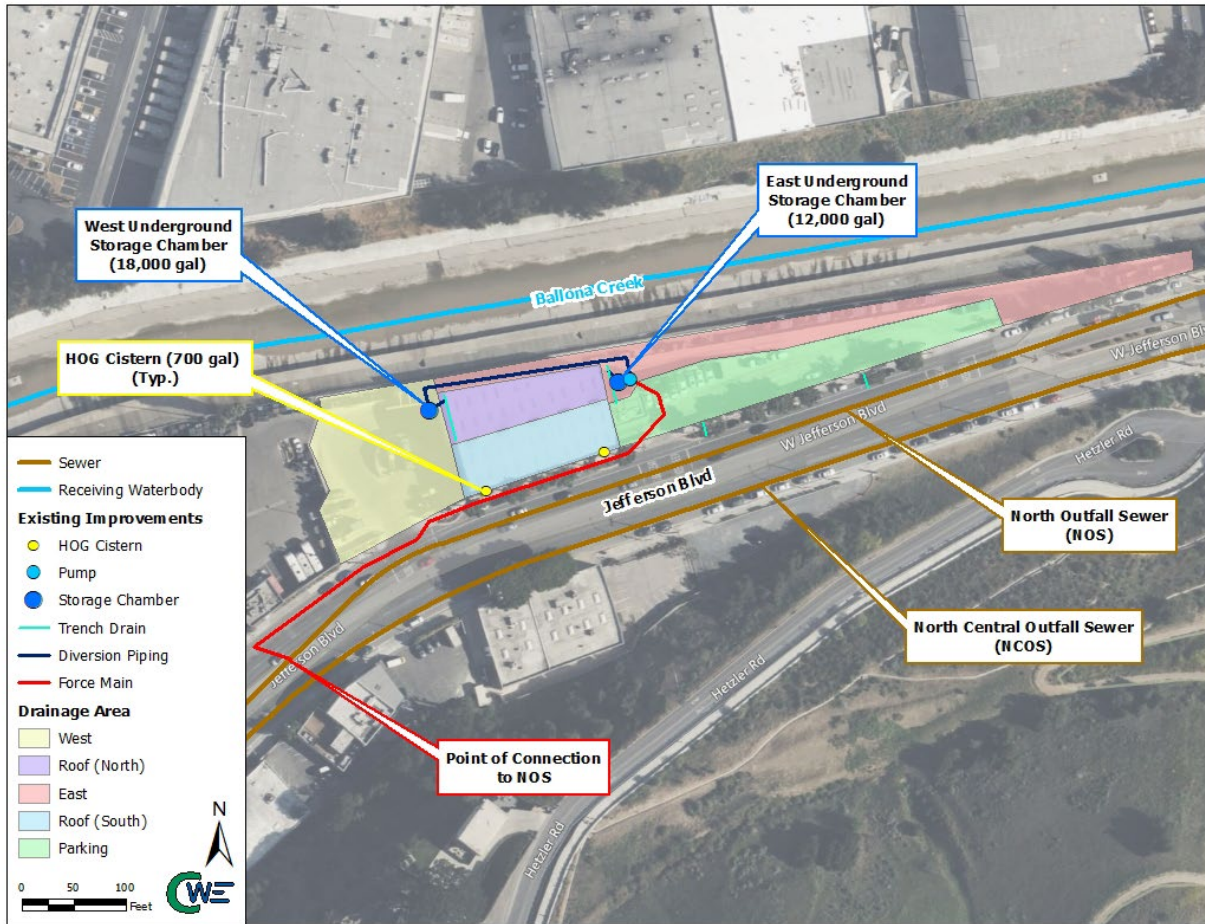


Figure 1-2 Existing Hydrology and Stormwater Features

The 85th percentile, 24-hour storm event depth is 1.10 inches for the Project area. **Table 1-1** summarizes the existing drainage areas and stormwater feature capacities provided by the City.

Table 1-1 City Runoff Volumes and System Capacity

| Drainage Area | Area (sf) | Provided Capacity (gal) | Drains to |
|---|---------------|-------------------------|--------------------------|
| Areas Draining to Existing Sewer Diversion | | | |
| West | 15,500 | 18,000 | West Chamber |
| North Roof | 6,300 | | |
| East | 21,800 | 12,000 | East Chamber |
| Subtotal | 43,600 | 30,000 | Existing Chambers |
| Additional Areas | | | |
| South Roof | 7,500 | 1,400 | HOG/Storm Drain |
| Parking | 13,800 | -- | Storm Drain |
| Subtotal | 21,300 | 1,400 | -- |
| Grand Total | 64,900 | 31,400 | -- |

The combination of two existing underground chambers are sufficient to capture the 85th percentile volume from east, west, and north roof drainage areas. However, the existing stormwater features do not have enough capacity to capture the entire 85th percentile volume generated from the south roof and parking drainage areas.

1.3 Project Goals and Objectives

To comply with the consent decree established with LA Waterkeeper, the Project will upgrade the existing stormwater quality system to capture the 85th percentile runoff volume for the south roof and parking drainage areas. The proposed improvements include diverting runoff from the south roof and parking areas into a 15,000-gallon aboveground storage tank, where it will be routed to the west underground storage chamber and eventually discharged to NOS. The 85th percentile runoff typically contains majority of the pollutants deposited on the ground surface. Diverting it to sanitary sewer could effectively reduce the frequency of IGP Numeric Action Level (NAL) and Numeric Effluent Limitation (NEL) exceedances. The diverted runoff is conveyed to a wastewater treatment facility; therefore full pollutant removal is expected to be achieved for the diverted stormwater runoff.

The upgrades will increase the sewer diversion capacity from 30,000 gallons to 45,000 gallons, while maintaining the CiLA approved discharge rate of 100 gpm. The aboveground storage tank was selected for its cost-effectiveness and ease of construction, since it avoids the need for a new sewer connection and associated permitting needs. The aboveground storage tank would also provide an opportunity for the City to use the captured runoff for sewer jetting. **Figure 1-3** illustrates the general concept of the Project.

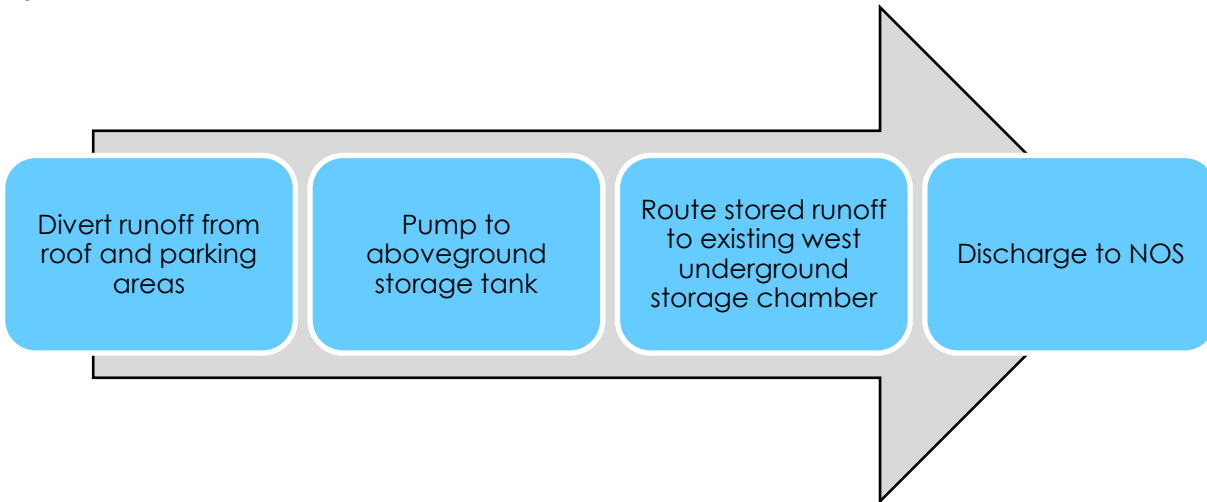


Figure 1-3 General Project Concept

2. Hydrologic Analysis

A hydrologic analysis was performed to identify runoff tributary to the Project during the 85th percentile, 24-hour storm event. The Modified Rational Method (MODRAT) developed by Los Angeles County Flood Control District (LACFCD) was used to perform hydrologic analysis in accordance with Los Angeles County Public Works (LACPW) Hydrology Manual (2006) methodology. This section summarizes the methodology and results of the preliminary hydrologic analysis performed.

2.1 Methodology

The LACPW Hydrology Manual outlines the approach for determining capture volume. Catchment area, flow path length and slope, rainfall depth, percent impervious, and soil type were used to calculate the runoff volume and peak flow rate for the drainage area tributary to the Project. **Table 2-1** summarizes the input parameters used to perform the hydrologic analyses for Project drainage areas.

Table 2-1 Hydrologic Modeling Data Requirements

| Required Data | Description |
|-----------------------------|---|
| Subarea Size | Area inside the drainage boundaries (also referred to as drainage area) |
| Flow Path Length | Length of the conveyance between drainage area collection points |
| Flow Path Slope | Slope of the flow path |
| Conveyance Data | Description of the flow conveyance between collection points |
| Soil Types | Soil classification identifying the hydrologic characteristics of the drainage area's surface soils |
| Land Use/ Imperviousness | Classification of impervious surface area based on development types within the drainage area |
| Design Storm Definition | Unique design storm based on the location and the rainfall recurrence interval being modeled |

2.2 Drainage Area

The Project proposes to divert runoff from the south roof and parking areas. The drainage area tributary to the Project was delineated based on as-builts of the Transfer Station's existing Stormwater Diversion System and 2-foot contours acquired from Los Angeles Region Imagery Acquisition Consortium (LARIAC) data. Drainage areas tributary to the project are shown in **Figure 2-1**.



Figure 2-1 South Roof and Parking Drainage Areas

Tributary drainage areas were re-assessed using HydroCalc, a tool developed by LACPW that uses MODRAT methodology. **Table 2-2** summarizes the drainage area, flow path length, and slope for the Project. The combined drainage area is not a summation of the individual drainage area elements, as shown in the table below.

Table 2-2 Hydrologic Data Input

| Drainage Area | Area (ac) | Flow Path (ft) | Slope (ft/ft) |
|-----------------|-------------|----------------|---------------|
| South Roof | 0.18 | 130.99 | 0.17 |
| Parking | 0.37 | 148.56 | 0.01 |
| Combined | 0.55 | 148.46 | 0.01 |

2.3 Land Use and Impervious Area

Land use was determined based on Geographic Information System (GIS) shapefile data collected by the Southern California Association of Governments (SCAG). According to the data, the Project drainage area comprises of industrial land use. Based on Appendix D of the LACPW Hydrology Manual, industrial land uses have an impervious area percentage of 91%. However, based on a site visit conducted on

April 22, 2025, the entire Project drainage area was observed to be impervious. Therefore, 100% imperviousness was used for HydroCalc calculations.

2.4 Soil Type

Soil type was determined based on GIS shapefile data of hydrologic soil types identified in the LACPW Hydrology Manual. It was determined that the Project is comprised of soil type 13 (Ramona Loam) and soil type 16 (Yolo Loam), with the latter being the predominant soil type. Soil type 16 (Yolo Loam) was used for HydroCalc calculations. **Figure 2-2** illustrates the soil types based on the LACPW Hydrology Manual.



Figure 2-2 Soil Type

2.5 Results

Table 2-3 summarizes the HydroCalc results of the hydrologic analysis performed based on the methodology detailed above.

Table 2-3 Results of Hydrologic Analysis

| Drainage Area | 85th Percentile Runoff Volume (cu-ft) | 85th Percentile Runoff Volume (gal) | 85th Percentile Peak Flow Rate (cfs) |
|----------------------|---|---|--|
| Combined | 1960.20 | 14,662.32 | 0.23 |

3. Proposed Alternatives

The Project proposes to divert 85th percentile, 24-hour storm event runoff from the south roof and parking drainage areas, store it in an aboveground storage tank for 72 hours, and then discharge to the sanitary sewer for further treatment, which is what is currently done with runoff generated from the rest of the site. Stormwater runoff from the Project drainage area will be diverted from four existing storm drains, through a proposed diversion line installed in the planter area adjacent to the existing site perimeter wall, to avoid sidewalk reconstruction. The exact alignment of the diversion line will be confirmed during the final design phase. The captured runoff will be pumped to the aboveground storage tank and routed to the west underground storage chamber for discharge. Three design alternatives were identified and summarized in the sections below, along with preliminary construction cost opinion for each alternative.

3.1 Diversion

Four diversion systems are proposed to capture runoff from downstream of the two HOG systems from the south roof drainage area and two trench drains from the parking drainage area. These diversion systems will be installed along the existing trench drain or pipe shown in **Figure 3-1** to intercept the flow before they outlet to the curb. The proposed diversion systems will capture runoff from the 85th percentile, 24-hour storm event, while allowing higher flows to bypass and overflow as they do under existing conditions.



Figure 3-1 Proposed Diversion System Location

3.2 Diversion Piping

The proposed diversion line will be sized for the peak flow rate of 0.23 cfs. Manning's equation was used to determine the size of the diversion piping. **Table 3-1** summarizes the proposed pipe configuration.

Table 3-1 Pipe Configuration

| Parameter | Value |
|---|--------------------------|
| 85 th Percentile Flow Rate (cfs) | 0.23 |
| Longitudinal Slope (ft/ft) | 0.005 |
| Pipe Material | Polyvinyl Chloride (PVC) |
| Manning's Roughness Coefficient "n" | 0.011 |
| Resulting Pipe Diameter (in) | 6 |

Based on As-Built drawings, several existing utility lines are located along the sidewalk area and may cross the proposed diversion pipe alignment. A utility search will be performed in the design phase using Underground Service Alert (DigAlert) to determine the existing utilities in the Project vicinity. Existing utilities may be verified through potholing by the selected Contractor prior to construction. The slope of the diversion pipe may vary slightly as compared to the slope shown above to avoid existing utilities.

3.3 Pump System

The pump system will be designed to accommodate the combined 85th percentile, 24-hour storm peak flow rate of 0.23 cfs, as listed in **Table 2-3**. The pump system contains several key components, the most important of which are summarized in **Table 3-2**. A level sensor will be included in the downstream chamber(s) to communicate back with the pump system, such that when the downstream storage system is full, the pump station will not turn on.

Table 3-2 Summary of Key Pump Components

| Component | Description |
|--|---|
| Pump Well | <ul style="list-style-type: none"> ➤ Concrete wet well can withstand H-20 loading (likely precast) ➤ Diameter depends on size of pump, anticipated to be 5 feet ➤ Depth depends on inflow pipe elevation and includes a sump below inflow to make sure the submerged equipment stays submerged, anticipated to be approximately 12 feet beneath ground surface |
| Pump/motor | <ul style="list-style-type: none"> ➤ Submersible pump ➤ Requires a Variable Frequency Drive (VFD) pump with up to 0.23 cfs peak flow rate, to accommodate varying flow rates over the course of a storm ➤ Redundant pump proposed (two pump system with one operating at a time) |
| Valves | <ul style="list-style-type: none"> ➤ Various valves proposed to control pipe flow and prevent back flow ➤ Valve vault will be installed adjacent to the wet well along force main ➤ A valve will be installed on the diversion line which will close when the tank has reached capacity |
| Supervisory Control and Data Acquisition (SCADA) | <ul style="list-style-type: none"> ➤ City likely has existing onsite controls related to the existing sewer diversion system ➤ Will likely utilize/tie into existing onsite SCADA system (if applicable) ➤ Will control and communicate information regarding operations |

| Component | Description |
|--------------------|---|
| Electrical Service | <ul style="list-style-type: none"> ➤ Evaluation will be done during design phase to check if existing electrical conduits can accommodate proposed electrical improvements ➤ May require local upgrades if capacity is not available (anticipated to require three phase, 120 or 280 volts, which matches existing service) ➤ Panel will be required onsite ➤ May require separate service (likely from Southern California Edison [SCE]) if the existing stormwater electrical system does not have enough additional capacity available |

3.4 Alternative 1

Figure 3-2 shows the proposed configuration for Alternative 1.

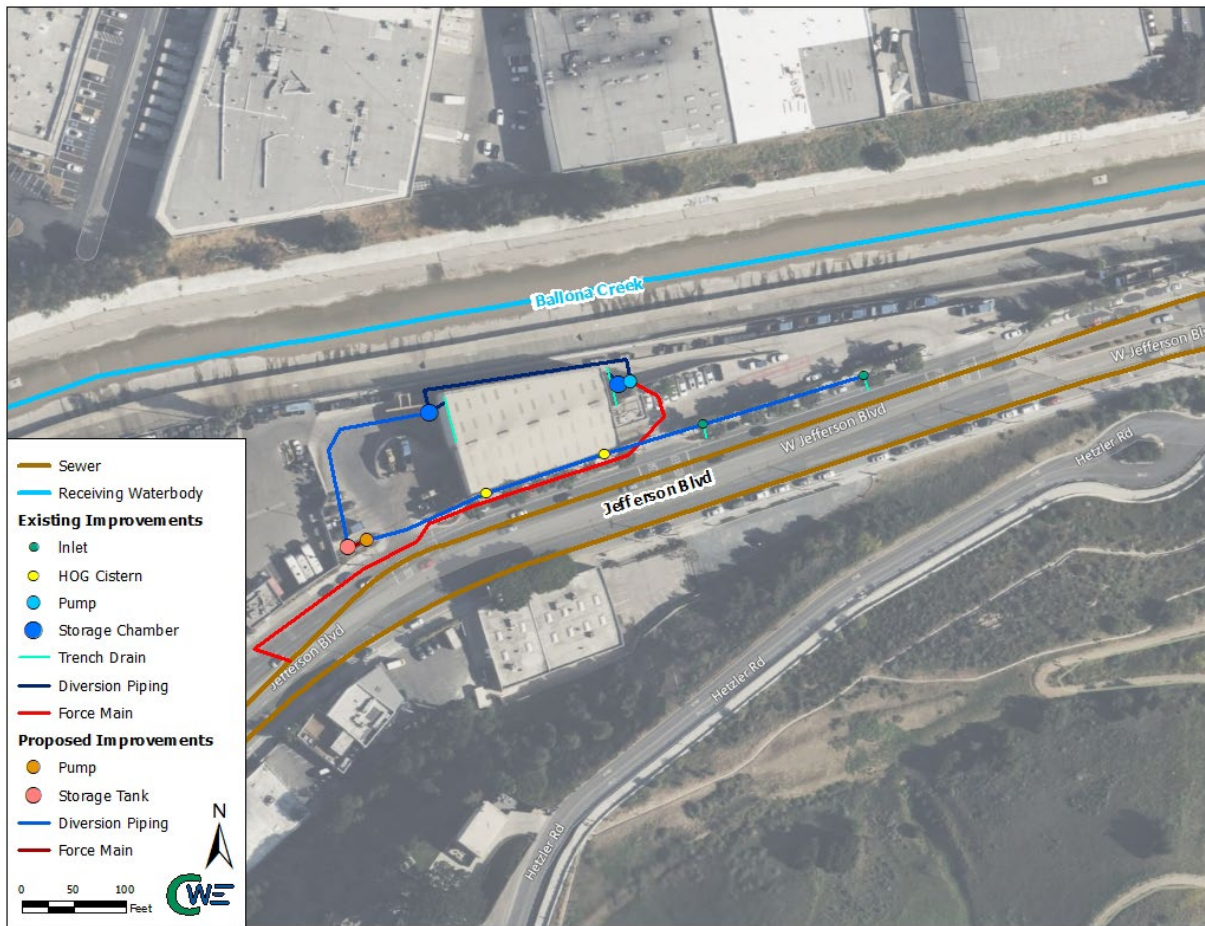


Figure 3-2 Alternative 1

Alternative 1 proposes a 6-inch PVC diversion line beneath the planter area adjacent to the sidewalk, intercepting runoff from the existing trench drain from parking drainage area and from downstream of the HOG cisterns from south roof drainage area. Diverted runoff will gravity flow to a pump system at the southwest corner of the site, where it will be pumped to the aboveground storage tank and gravity flow to the west underground chamber. The aboveground storage tank would be located at the

southwest corner of the facility, where it is currently being utilized for parking/storage. It will be located adjacent to the existing wall and will occupy an approximate area of 12 feet by 12 feet. It will result in some loss of storage/parking area. The existing wall will not be impacted due to proposed construction. The pump and aboveground storage tank are outside of the main drive aisle within the facility, allowing them to be accessed for maintenance without significant impacts to facility operation. The tank is also easily accessible to the City’s sewer maintenance crews to fill water trucks for jetting.

3.4.1 Alternative 1 - Preliminary Cost Opinion

Table 3-3 summarizes the preliminary cost opinion for Alternative 1. The cost opinions were developed using various sources of information and the engineer’s best judgement. The cost opinions are based on present value (2025 dollars) and do not account for inflation or changes in pricing that may occur by the time the Project is constructed, such as fire recovery cost and tariffs. Costs will be refined in the design phase.

Table 3-3 Preliminary Cost Opinion for Alternative 1

| Item No. | Description | Unit | Quantity | 2025 Unit Price | 2025 Total |
|---|---|------|----------|-----------------|--------------------|
| 1 | Mobilization (10%) | LS | 1 | \$121,500 | \$121,500 |
| 2 | Survey | LS | 1 | \$25,000 | \$25,000 |
| 3 | AC Pavement Removal | SF | 5,000 | \$15 | \$75,000 |
| 4 | Driveway Removal | SF | 900 | \$6 | \$5,400 |
| 5 | Crushed Aggregate Base | CY | 170 | \$170 | \$28,900 |
| 6 | AC Pavement | TON | 380 | \$240 | \$91,200 |
| 7 | Driveway Approach | SF | 900 | \$125 | \$112,500 |
| 8 | 6" PVC Pipe, Appurtenances, and Bedding | LF | 710 | \$220 | \$156,200 |
| 9 | Diversion from Existing Inlets | EA | 4 | \$15,000 | \$60,000 |
| 10 | Aboveground Water Tank (15,000 Gallon) | LS | 1 | \$80,000 | \$80,000 |
| 11 | Pump System (Wet Well, Force Main, and Appurtenances) | LS | 1 | \$300,000 | \$300,000 |
| Subtotal, not including Mobilization: | | | | | \$934,200 |
| Contingency (30%), not including Mobilization: | | | | | \$280,300 |
| Grand Total: | | | | | \$1,336,000 |

3.5 Alternative 2

Alternative 2 is similar to Alternative 1, except that the pump system and aboveground storage tank are placed in the northwest portion of the site, within an access road that is currently used for storage. The pump station and aboveground tank are out of the normal operational area for the Transfer Station, allowing them to be maintained without significant impacts to the facility. Improvements will be placed to avoid existing equipment used to cover trucks as they leave the Transfer Station. The aboveground storage tank does need to be accessible to sewer maintenance crews so that their water trucks can be filled for jetting. Accessibility from that perspective needs to be further evaluated by the City.

Figure 3-3 shows the proposed configuration for Alternative 2.



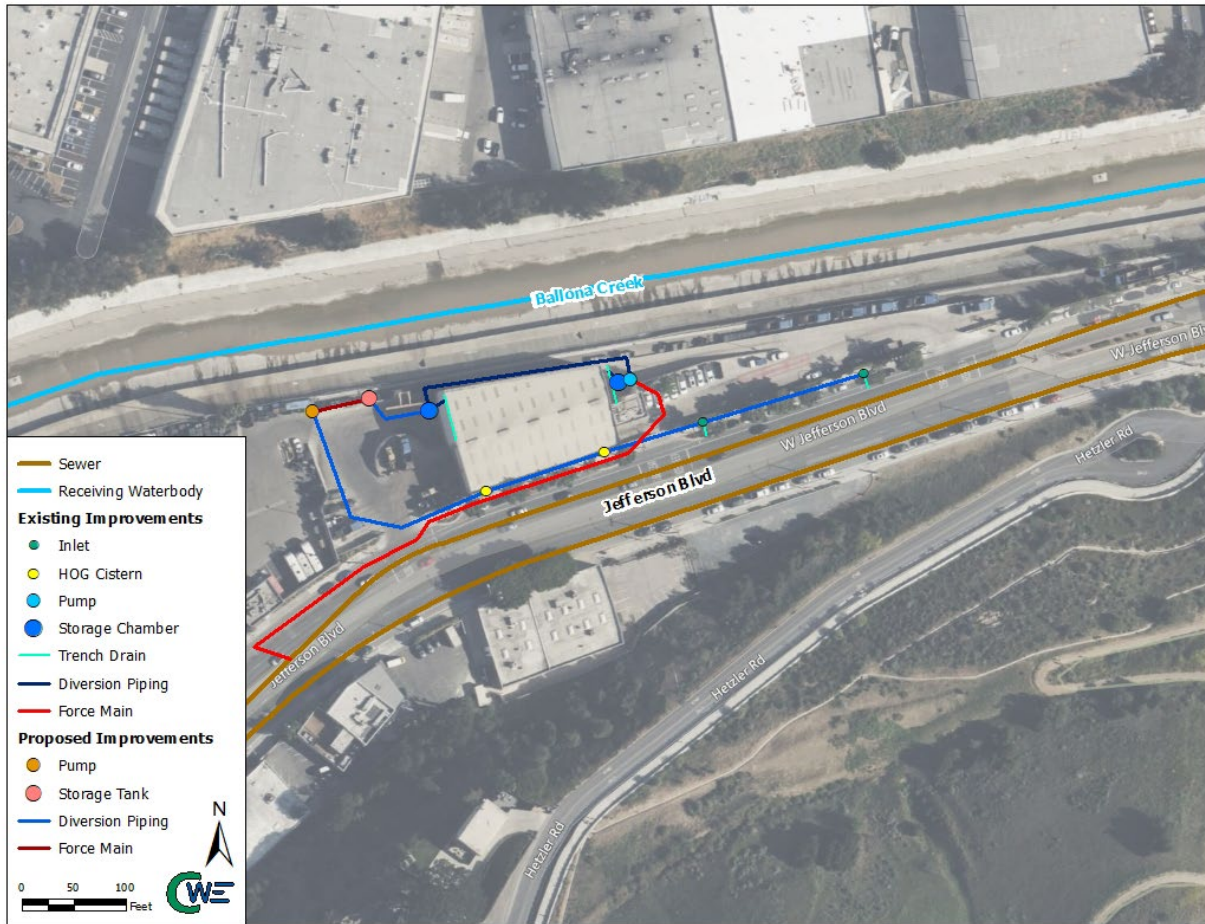


Figure 3-3 Alternative 2

3.5.1 Alternative 2 - Preliminary Cost Opinion

Table 3-4 summarizes the preliminary cost opinion for Alternative 2, which was prepared using the same methodology described under **Section 3.4.1**.

Table 3-4 Preliminary Cost Opinion for Alternative 2

| Item No. | Description | Unit | Quantity | 2025 Unit Price | 2025 Total |
|----------|---|------|----------|-----------------|------------|
| 1 | Mobilization (10%) | LS | 1 | \$120,900 | \$120,900 |
| 2 | Survey | LS | 1 | \$25,000 | \$25,000 |
| 3 | AC Pavement Removal | SF | 5,000 | \$15 | \$75,000 |
| 4 | Driveway Removal | SF | 900 | \$6 | \$5,400 |
| 5 | Crushed Aggregate Base | CY | 170 | \$170 | \$28,900 |
| 6 | AC Pavement | TON | 380 | \$240 | \$91,200 |
| 7 | Driveway Approach | SF | 900 | \$125 | \$112,500 |
| 8 | 6" PVC Pipe, Appurtenances, and Bedding | LF | 690 | \$220 | \$151,800 |

| Item No. | Description | Unit | Quantity | 2025 Unit Price | 2025 Total |
|---|---|------|----------|-----------------|--------------------|
| 9 | Diversion from Existing Inlets | EA | 4 | \$15,000 | \$60,000 |
| 10 | Aboveground Water Tank (15,000 Gallon) | LS | 1 | \$80,000 | \$80,000 |
| 11 | Pump System (Wet Well, Force Main, and Appurtenances) | LS | 1 | \$300,000 | \$300,000 |
| Subtotal, not including Mobilization: | | | | | \$929,800 |
| Contingency (30%), not including Mobilization: | | | | | \$279,000 |
| Grand Total: | | | | | \$1,329,700 |

3.6 Alternative 3

Figure 3-4 shows the proposed configuration for Alternative 3.

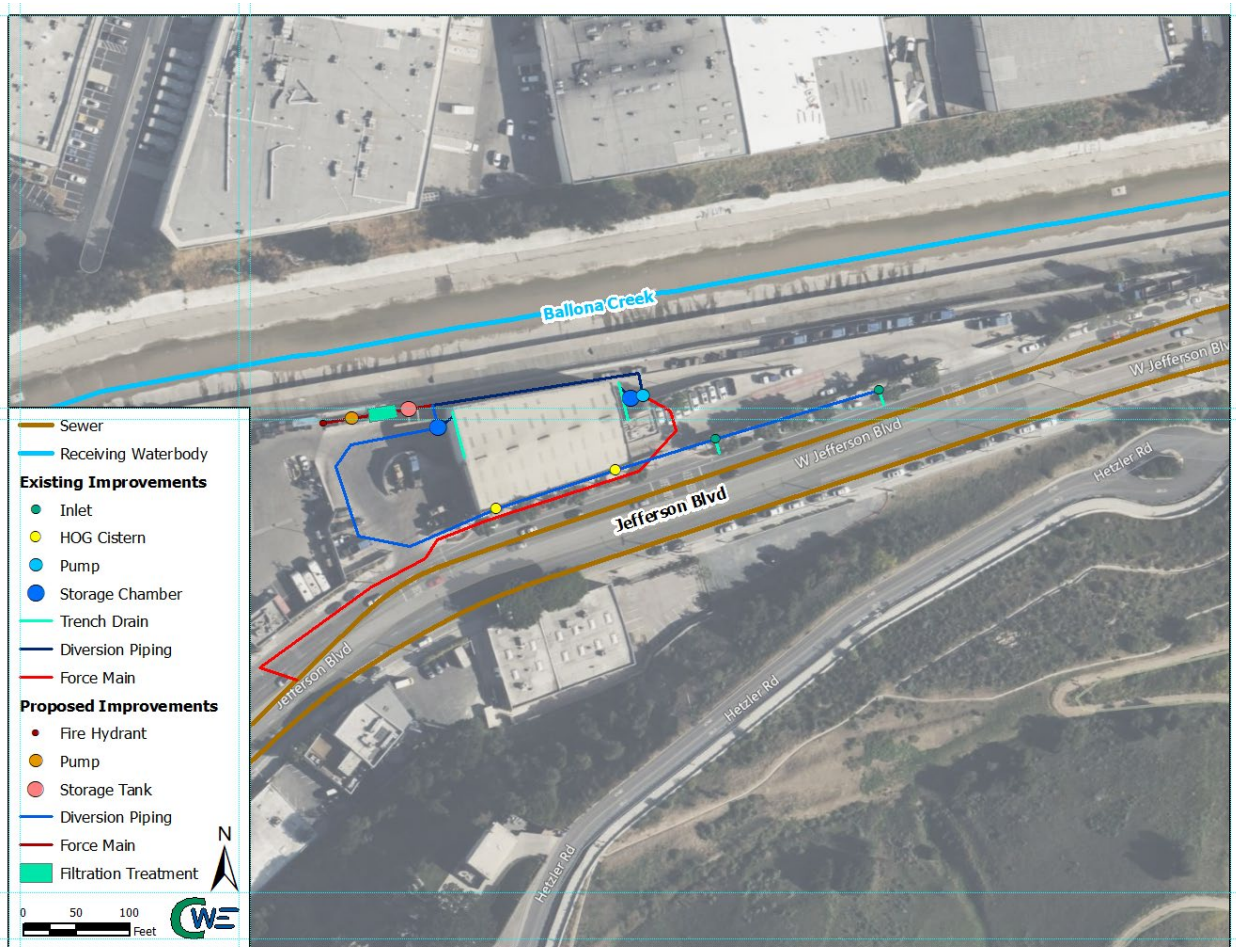


Figure 3-4 Alternative 3

Unlike Alternatives 1 and 2, Alternative 3 aims to gravity flow intercepted runoff directly to the west underground storage chamber, where it can be pumped to the aboveground storage tank. Valves will be installed to alternate flow direction, either to the existing underground chamber or to the aboveground storage tank. Captured stormwater runoff will be pumped into the aboveground tank during the storm event to fill the tank. The aboveground tank can be placed either at Alternative 1 or 2 location (Alternative 2 location shown in the figure above). Following the storm event (at least 72 hours after rain stops), runoff can gravity flow back to the underground storage chamber for sewer discharge. If water from the aboveground storage tank is used by the sewer maintenance team for jetting, then there is an ability to pump more water into the aboveground storage tank. The captured runoff will be routed through a filtration unit to remove pollutants and conveyed to a fire hydrant through an in-line pump and isolation valves. Sewer jetting trucks can be filled up from the proposed fire hydrant, where the existing retaining wall begins. The City will have access to up to 33,000 gallons of captured stormwater for sewer jetting, which is sufficient to fill approximately 20 trucks, whereas the other two alternatives only provide 15,000 gallons (approximately 9 trucks).

3.6.1 Alternative 3 - Preliminary Cost Opinion

Table 3-5 summarizes the preliminary cost opinion for Alternative 3, which was prepared using the same methodology described under **Section 3.4.1**.

Table 3-5 Preliminary Cost Opinion for Alternative 3

| Item No. | Description | Unit | Quantity | 2025 Unit Price | 2025 Total |
|---|--|------|----------|-----------------|--------------------|
| 1 | Mobilization (10%) | LS | 1 | \$187,400 | \$163,700 |
| 2 | Survey | LS | 1 | \$25,000 | \$25,000 |
| 3 | AC Pavement Removal | SF | 5,000 | \$15 | \$75,000 |
| 4 | Driveway Removal | SF | 900 | \$6 | \$5,400 |
| 5 | Crushed Aggregate Base | CY | 170 | \$170 | \$28,900 |
| 6 | AC Pavement | TON | 380 | \$240 | \$91,200 |
| 7 | Driveway Approach | SF | 900 | \$125 | \$112,500 |
| 8 | 6" PVC Pipe, Appurtenances, and Bedding | LF | 720 | \$220 | \$158,400 |
| 9 | Diversion from Existing Inlets | EA | 4 | \$15,000 | \$60,000 |
| 10 | Aboveground Water Tank (15,000 Gallon) | LS | 1 | \$80,000 | \$80,000 |
| 11 | Pump Systems (Upgrades to Existing Pump and Inline Pump) | LS | 1 | \$200,000 | \$200,000 |
| 12 | Filtration System and Appurtenances | LS | 1 | \$412,500 | \$412,500 |
| 13 | Fire Hydrant | LS | 1 | \$10,000 | \$10,000 |
| Subtotal, not including Mobilization: | | | | | \$1,258,900 |
| Contingency (30%), not including Mobilization: | | | | | \$377,700 |
| Grand Total: | | | | | \$1,800,300 |

3.7 Comparison of Alternatives

The three proposed alternatives are mostly similar, with slight variations in layout and configuration. The cost opinions for three alternatives are also comparable. None of the alternatives will require a new sewer connection, which will avoid additional permitting requirements. By diverting stormwater to the sanitary sewer, the Project can achieve 100% pollutant load reduction, significantly reducing the risk of future regulatory compliance challenges. Alternative 3 is the only option with sewer jetting, hence the higher cost. **Table 3-6** summarizes the comparison of the alternatives discussed above.

Table 3-6 Comparison of Proposed Alternatives

| Parameters | Alternative 1 | Alternative 2 | Alternative 3 |
|----------------------|---|---|--|
| Design | <ul style="list-style-type: none"> ➤ 6-inch PVC gravity flow diversion line ➤ Pump and aboveground tank at southwest corner of the site ➤ Stored runoff will gravity flow to the west underground chamber | <ul style="list-style-type: none"> ➤ 6-inch PVC gravity flow diversion line ➤ Pump and aboveground tank at the access road ➤ Stored runoff will gravity flow to the west underground chamber | <ul style="list-style-type: none"> ➤ 6-inch PVC gravity flow diversion line ➤ Divert runoff to the existing west underground chamber ➤ Stored runoff will be pumped into the aboveground tank ➤ Valves will be installed to alternate flow ➤ A filtration system is proposed to treat the captured runoff before it is used for sewer jetting |
| Cost | \$1,336,000 | \$1,329,700 | \$1,800,300 |
| Advantages | <ul style="list-style-type: none"> ➤ Aboveground tank is close to entrance (easy for sewer maintenance trucks to access) ➤ Pollutant load in the diverted flow will be fully reduced through wastewater treatment processes | <ul style="list-style-type: none"> ➤ Utilize dead storage space for the aboveground tank ➤ Pollutant load in the diverted flow will be fully reduced through wastewater treatment processes | <ul style="list-style-type: none"> ➤ More volume available for sewer jetting ➤ If more volume is used for jetting, less runoff will go to the sewer (lower sewer fees) ➤ Pollutant load in the diverted flow will be fully reduced through wastewater treatment processes |
| Disadvantages | <ul style="list-style-type: none"> ➤ Loss of parking spaces ➤ Construction activities at the front of the site could disturb facility operations (temporary impact) | <ul style="list-style-type: none"> ➤ Tighter space for future operation and maintenance ➤ May be more difficult for sewer maintenance trucks to access | <ul style="list-style-type: none"> ➤ Higher cost due to the filtration system for sewer jetting ➤ Additional piping |

3.8 Preferred Alternative

Alternative 3 is selected as the preferred alternative. Alternatives 1 and 2 provide limited storage and rely solely on gravity flow to the underground chamber. Alternative 3 enables runoff to be initially diverted to the underground chamber and then pumped into an aboveground storage tank for reuse. This configuration allows the City to access up to 33,000 gallons of captured stormwater for beneficial use (sewer jetting), more than double the capacity of the other alternatives. With the ability to fill approximately 20 jetting trucks, the City can reduce its reliance on potable water and lower sewer discharge volumes and associated fees. Although Alternative 3 has the highest estimated construction cost, the increased stormwater reuse capacity, reduction in long-term operational costs, and the utilization of dead storage space make it the most beneficial and sustainable choice.

3.9 Construction Impacts

The Project will be designed in the way that minimizes disruption to the daily operations of the Transfer Station. The City has coordinated with Transfer Station staff and confirmed that the proposed aboveground tank locations will have a minimal impact to their daily operations. Additional coordination is required to confirm access restrictions for the sewer maintenance team's water trucks. The Transfer Station operates during the following hours:

- Monday to Friday 4:30 am – 4:00 pm
- Saturday 4:30 am – 1:30 pm
- Closed on Sundays, Christmas, and New Year's Day

Construction activities, especially those that could restrict Transfer Station operations, may be scheduled outside of these operating hours. During operating hours, open trenches can be covered with steel plates to maintain safe and uninterrupted site access and operations. The west Transfer Station driveway is shared with the Culver City Fire Department, who has a training facility west of the Transfer Station. Minor temporary impacts are expected to the shared driveway in association with diversion piping. The driveway must be available during operational hours and coordination with the Fire Department will be required during construction.

4. Permitting Requirements

The proposed design alternative does not need a new sewer connection. Therefore, no additional sewer connection permit is anticipated for this Project. The City has formally submitted a Sewer Capacity Availability Request (SCAR) to increase the stormwater diversion system capacity from 30,000 gallons to 45,000 gallons and reduce runoff storage period from 72 hours to 12 hours. The recently submitted SCAR application is attached in **Appendix B**. Additional pertinent documentation, coordination, and design changes is contingent on the approval of the submitted SCAR. The City should be able to discharge the additional volume based on the original SCAR, as the SCAR primarily focuses on the discharge rate and time of discharge. If the new SCAR is not approved, it is anticipated that the increase volume per storm would be acceptable, while the City would need to continue holding the runoff volume for the originally approved 72 hours.

5. References

City of Culver City. 2017. Culver City Transfer Station Storm Water Diversion Project. As-built plans. Designed by PRP Engineering, Inc..

City of Culver City. 1983. Sanitary Sewer Extension Force Main. As-built plans. Designed by Edward F. Escalle Engineering.

City of Culver City. 2018. Submittal No. 2 – HOG Rainwater Storage Systems. Technical Document. Designed by STL Landscape, Inc..

City of Culver City. 2017. Transfer Station Rain Garden Project Phase II, PZ-948. As-built plans. Designed by Blue Ocean Civil Consulting.

City of Culver City. 1984. Transfer/Recycling Station 9275 West Jefferson Blvd. Culver City CA. As-built plans. Designed by Hekimian and Associates and Van Dorpe and Associates.

Los Angeles County Department of Public Works (LACDPW). 2006. Hydrology Manual.
https://dpw.lacounty.gov/wrd/publication/engineering/2006_Hydrology_Manual/2006%20Hydrology%20Manual-Divided.pdf.

Los Angeles County Department of Public Works (LACDPW). Hydrology Map GIS.
<https://dpw.lacounty.gov/wrd/hydrologygis/>.

Los Angeles County Flood Control District (LACFCD). 1982. Hydraulic Design Manual.
https://dpw.lacounty.gov/wrd/publication/engineering/design_manual.pdf.

Appendix A

Request to Discharge Dry-Weather Runoff Approval Letter



CITY OF LOS ANGELES

CALIFORNIA



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MAYOR

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INDUSTRIAL WASTE
MANAGEMENT DIVISION
2714 MEDIA CENTER DRIVE
LOS ANGELES, CA 90065
OFFICE: (323) 342-6200
FAX: (323) 342-6111

April 26, 2016

Lee Torres, P.E., Interim Senior Civil Engineer
Environmental Programs
City of Culver City, Public Works Department
9505 W. Jefferson Boulevard
Culver City, CA. 90232

Dear Mr. Torres:

REQUEST TO DISCHARGE DRY WEATHER RUN-OFF

The City of Los Angeles, Industrial Waste Management Division (IWMD) received your email on March 24, 2016 requesting approval to discharge dry weather run-off from a diversion project at Culver City's Transfer Station Facility located at 9255 Jefferson Boulevard. The Diversion System proposes to capture the first flush of rain (1.1") of on-site run-off and then be stored in two underground storage tanks with the capacity of 18,500 and 12,600 gallons, equaling a total capacity of 31,100 gallons. The captured run-off would be discharged to the Culver City's existing sanitary sewer main after the rain event at a rate of 100 gpm.

After reviewing the available data, we concluded that the impact on the Hyperion Water Reclamation Plant for the reported pollutants concentration, volume, and flow level would be acceptable. Therefore, we have approved your request to discharge.

If you have any questions, you may contact Loudmilla Vertanessian, of my staff, at (323) 342-6084.

Sincerely,

ENRIQUE C. ZALDIVAR, Director
LA Sanitation

By: *Michael Simpson*

Michael Simpson, Division Manager
Industrial Waste Management Division

c: Tim Dafeta, LASAN
Loudmilla Vertanessian, IWMD
Lonnie Ayers, IWMD

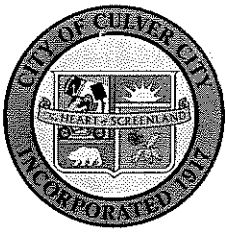
LAD/MS:lm

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Culver CITY
PUBLIC WORKS DEPARTMENT
9770 Culver Boulevard, Culver City, California 90232



Charles D. Herbertson, P.E., LS
Public Works Director and
City Engineer

(310) 253-5600

FAX (310) 253-5626

June 2, 2016

Mr. Ali Pootsi, Division Manager
C/O Eduardo Perez, Environmental Assoc. Engr.
City of Los Angeles, Department of Public Works
Bureau of Sanitation, Wastewater Engineering Services Division
Mail Stop 544
2714 Media Center Drive
Los Angeles, CA 90065

Subject: Dryweather Storm Water Diversion
City of Culver City Solid Waste Transfer Station
9255 Jefferson Boulevard.

Mr. Pootsi:

The City of Culver City (City) operates a solid waste transfer station at 9255 Jefferson Boulevard. In the effort to reduce pollutant loading to the adjacent Ballona Creek and comply with the facilities Industrial General Permit, the City proposes to construct a Dryweather Storm Drain Diversion Project (Project) at our Solid Waste Transfer Station (Transfer Station).

The City proposed diversion system would capture the first 1.1" of rainfall or approximately 32,000 gallons from the site. We propose to store the run-off for a period of 72 hours or as recommended by City of Los Angeles then discharge to our City sewer system at a maximum flow rate of 100 gpm. Ultimately, the flow would be discharged in the City of Los Angeles NOS trunk sewer near 9405 Jefferson Boulevard.

On April 26, 2016, the City has received approval from Michael Simpson, Industrial Waste Management Division for this proposed project, see attached letter. City staff has been working with Susan Rocha, Financial Management Division, and her staff to determine the reporting, monitoring, and billing requirements.

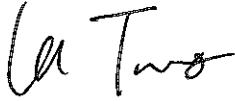
The City formally request that the proposed project be considered by your office. Please find enclosed the following for your review and comments;

1. Final Design Plans

2. Hydraulic Calculations
3. City Sewer Map
4. Industrial Waste Management Division Approval Letter dated April 26, 2016

If you have any questions or need additional information, please do not hesitate to contact me at (310) 253-6457 or lee.torres@culvercity.org

Yours truly,

A handwritten signature in black ink, appearing to read "Lee Torres". The signature is written in a cursive, flowing style.

Lee Torres, P.E.

Interim Senior Civil Engineer

Environmental Programs and Operations Division

Department of Public Works

Appendix B

Sewer Capacity Availability Request (SCAR)



City of Los Angeles
Bureau of Engineering

Sewer Availability Request

To: Bureau of Sanitation

The following request is submitted to you on behalf of the applicant requesting to connect to the public sewer system. Please verify that capacity exists at the requested location for the proposed developments shown below. The results are good for 180 days from the date of sewer capacity approval from the Bureau of Sanitation.

Job Address: ✱ 9255 Jefferson Blvd, Culver City, CA 90232

Engineering District:

Date Submitted: 3/20/2025

Request Will Serve Letter:

ID:

✱ Applicant: Javier De La Cruz (City of Culver City)

✱ Phone: 310.254.7078

✱ Address: 9505 Jefferson Blvd

✱ Fax: N/A

S-Map:

✱ City: Culver City

✱ State CA

✱ Zip: 90232

Wye Map:

✱ Email: javier.delacruz@culvercity.org

BPA No.

SIMMS Map - Maintenance Hole Locations

| | Street Name | U/S MH | D/S MH | Diameter |
|----|------------------|----------|----------|----------|
| 1. | ✱ Jefferson Blvd | 53505025 | 53505026 | 93 inch |
| 2. | | | | inch |
| 3. | | | | inch |

Proposed Project Description: ✱

| | Proposed Use Description | Quantity | Flow |
|----|---|----------------|---------|
| 1. | ✱ Stormwater Runoff from the City of Culver City Transfer Station | 15,000 Gallons | 100 GPD |
| 2. | | | GPD |
| 3. | | | GPD |
| 4. | | | GPD |

PROPOSED TOTAL FLOW: GPD

Remarks: The City is aiming to eliminate pollutant loading to the Ballona Creek with the proposal of upgrading the existing Transfer Station Stormwater Diversion System. The upgrades will divert the remaining drainage areas to the sewer system. The upgrades will use the existing Culver City sewer force main and Culver City sewer gravity main that connects to the City of Los Angeles NOS Trunk sewer. No new sewer connection will be required. The upgrades will increase the sewer diversion from 30,000 gallons at 100 gpm to 45, 000 gallons at 100 gpm. Refer to attachment for details.

CAPACITY AVAILABLE: YES NO

Note: Results are good for 180 days from date of approval by the Bureau of Sanitation

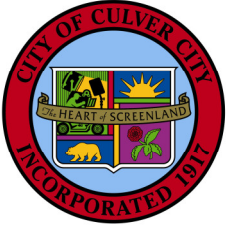
Date Approved:

Approved by: _____

**Bureau of Sanitation
Phone: 323-342-1562**

Submitted by: _____

**Bureau of Engineering
District:
Phone:
Fax:**



Culver CITY

PUBLIC WORKS DEPARTMENT



9770 Culver Boulevard, Culver City, California 90232

Yanni Demitri, P.E., T.E.
Public Works Director and
City Engineer

(310) 253-5600

Sean Singletary, P.E.
Environmental Programs & Operations
Manager

FAX (310) 253-5626

February 20, 2025

City of Los Angeles
Bureau of Sanitation
200 N Spring St
Los Angeles, CA 90012

Subject: Sewer Capacity Availability Request (SCAR) for
Transfer Station Stormwater Diversion System Upgrades
9255 Jefferson Blvd

The City of Culver City (City) operates a solid waste transfer station (Transfer Station) at 9255 Jefferson Blvd. Currently the Transfer Station Stormwater Diversion System captures the first flush of rain (1.1") on-site runoff into two underground storage tanks with the combined capacity of 30,000 gallons. The runoff is stored for a period of 72-hours before it is discharged at a maximum flow rate of 100 gpm into the City of Los Angeles NOS Trunk sewer near 9405 Jefferson Blvd. The approval letter to discharge dated April 26, 2016, from City of Angeles, Industrial Waste Management Division (IWMD) is attached.

The City is aiming to eliminate pollutant loading to the adjacent Ballona Creek and to comply with facility's Industrial General Permit with the proposal of upgrading the existing Transfer Station Stormwater Diversion System. The upgrades will divert the remaining drainage areas to the sewer system. The existing Transfer Station Stormwater Diversion System layout with drainage areas depicted is attached.

Diverting the first flush (1.1") of on-site runoff for the remaining drainage areas (Roof South and Parking) will require increasing the system capacity from 30,000 gallons to 45,000 gallons, a 15,000 gallons increase. The upgrades will use the existing City sewer force main and City sewer gravity main that connects to the City of Los Angeles NOS Trunk sewer. No new sewer connection will be required. Currently the City is performing a feasibility study for the upgrades to see which design options are feasible and cost effective.

SUBJECT:

Sewer Capacity Availability Request (SCAR) for Transfer Station Stormwater Diversion System Upgrades

Page 2 of 2

The City is formally requesting approval to amend the discharge approval with the changes listed below along with sewer capacity availability request (SCAR) for the Transfer Station Stormwater Diversion System Upgrades.

| Parameter | Existing | Proposed | Change |
|--|------------|------------|---------------------|
| Stormwater Diversion System Drainage Area (SF) | 43,600 SF | 64,900 SF | 21,300 SF increase |
| Stormwater Diversion System Capacity (gal) | 30,000 gal | 45,000 gal | 15,000-gal increase |
| First Flush of Rain Captured (inches) | 1.1 | 1.1 | No Change |
| Runoff Storage Period (hours) | 72 hours | 12 hours | 60-hour reduction |
| Discharge to Sewer Max Flow Rate | 100 gpm | 100 gpm | No Change |

If more information is needed, please contact Javier De La Cruz, 310.254.7078 (Javier.delacruz@culvercity.org).

Sincerely,



Sean Singletary, P.E.
Environmental Programs & Operations Manager

Copy:

Katie Harrel, P.E., ENV SP, QSD, CWE (Design Consultant)
Javier De La Cruz, P.E., Senior Civil Engineer

Attachments:

1. The approval letter to discharge dated April 26, 2016, from City of Angeles, Industrial Waste Management Division (IWMD)
2. Transfer Station Stormwater Diversion System – Drainage Areas and Layout
3. Exhibit - Existing Sewer Point of Connection

CITY OF LOS ANGELES

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—
ASSISTANT DIRECTORS

—
INDUSTRIAL WASTE
MANAGEMENT DIVISION
2714 MEDIA CENTER DRIVE
LOS ANGELES, CA 90065
OFFICE: (323) 342-6200
FAX: (323) 342-6111

April 26, 2016

Lee Torres, P.E., Interim Senior Civil Engineer
Environmental Programs
City of Culver City, Public Works Department
9505 W. Jefferson Boulevard
Culver City, CA. 90232

Dear Mr. Torres:

REQUEST TO DISCHARGE DRY WEATHER RUN-OFF

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Sincerely,

ENRIQUE C. ZALDIVAR, Director
LA Sanitation

By: *Michael Simpson*

Michael Simpson, Division Manager
Industrial Waste Management Division

c: Tim Dafeta, LASAN
Loudmilla Vertanessian, IWMD
Lonnie Ayers, IWMD

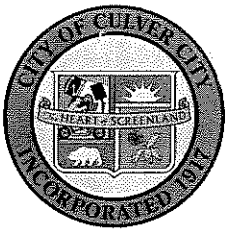
LAD/MS:lm

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PUBLIC WORKS DEPARTMENT
9770 Culver Boulevard, Culver City, California 90232



Charles D. Herbertson, P.E., LS
Public Works Director and
City Engineer

(310) 253-5600

FAX (310) 253-5626

June 2, 2016

Mr. Ali Pootsi, Division Manager
C/O Eduardo Perez, Environmental Assoc. Engr.
City of Los Angeles, Department of Public Works
Bureau of Sanitation, Wastewater Engineering Services Division
Mail Stop 544
2714 Media Center Drive
Los Angeles, CA 90065

Subject: Dryweather Storm Water Diversion
City of Culver City Solid Waste Transfer Station
9255 Jefferson Boulevard.

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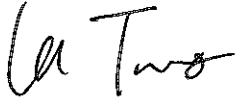
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Yours truly,

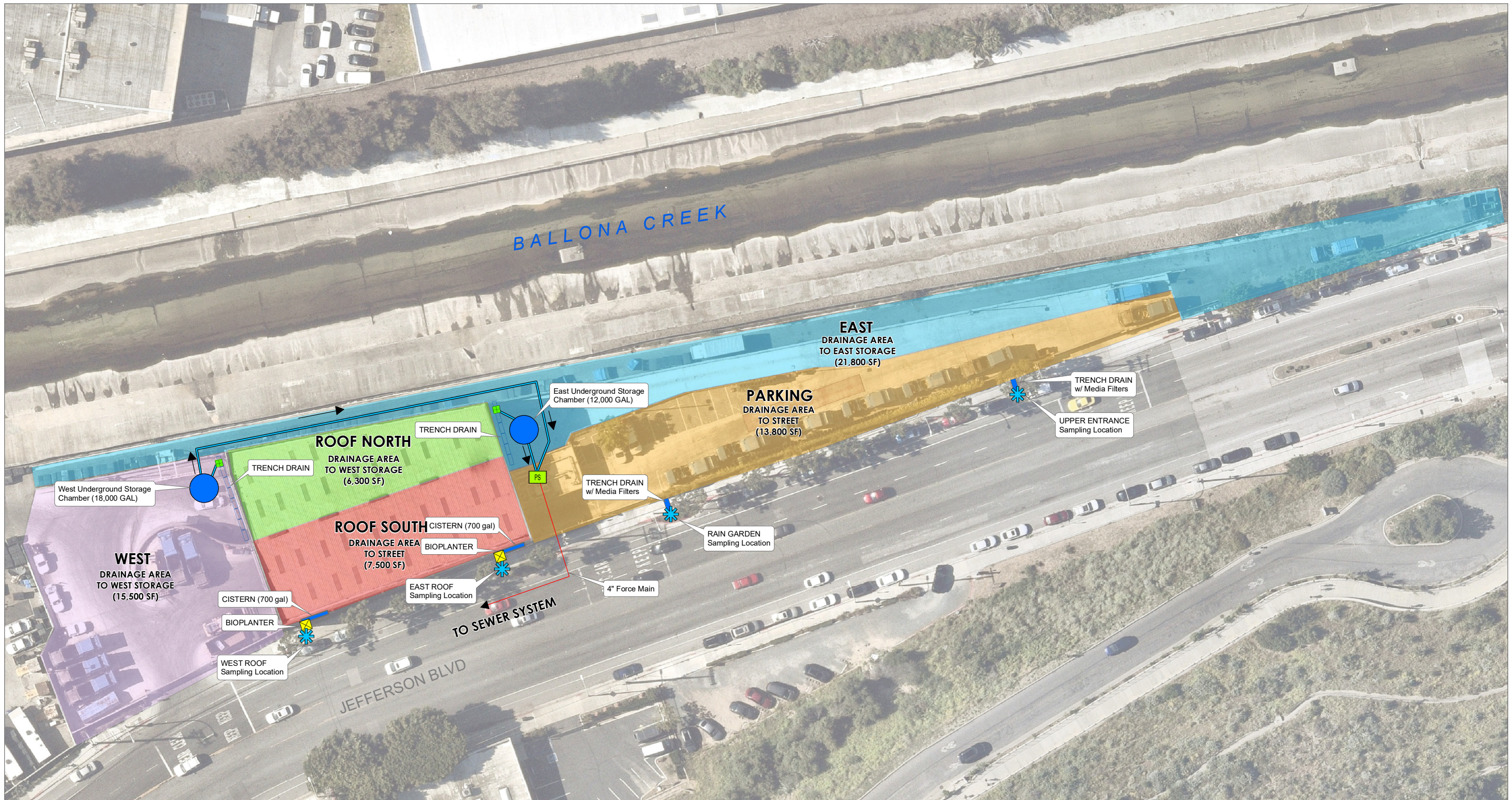
A handwritten signature in black ink, appearing to read "Lee Torres". The signature is written in a cursive, flowing style.

Lee Torres, P.E.

Interim Senior Civil Engineer

Environmental Programs and Operations Division

Department of Public Works



TRANSFER STATION - EXISTING DRAINAGE AREAS
9255 West Jefferson Blvd

- WEST DRAINAGE AREA**
Runoff drains to trench drain then to the west underground storage chamber then its pump to sewer system.
- ROOF SOUTH DRAINAGE AREA**
Runoff drains to two (2) cisterns that has a total capacity of 1,400 gallons. In a rain event where the cisterns become full, the runoff is diverted to bio-planters that provide metals & bacteria treatment before it drains to the curb and introduce to the stormwater system. Note the runoff collected in the cisterns is emptied after every rain event and reused.

- EAST DRAINAGE AREA**
Runoff drains to trench drain then to the east underground storage Chamber then its pump to sewer system
- PARKING DRAINAGE AREA**
Runoff drains to two (2) parkway trench drains with media filters that provide metals and bacteria treatment before it drains to the curb and introduce to the the stormwater system.
- ROOF NORTH DRAINAGE AREA**
Runoff drains to trench drain then to the west underground storage Chamber then its pump to sewer system





Existing Point of Connection to NOS Near 9405 Jefferson Bl.

Transfer Station 9255 Jefferson Bl

CITY YARD

CITY YARD

LOTZ LN

TOMPKINS WAY

NCOS

NOS

HE...

WAY